ABSTRACT

A method of fabricating a semiconductor device having a silicon layer disposed on an insulating film. Oxygen ions are implanted into selected parts of the silicon layer, which are then oxidized to form isolation regions dividing the silicon layer into a plurality of mutually isolated active regions. As the oxidation process does not create steep vertical discontinuities, fine patterns can be formed easily on the combined surface of the active and isolation regions. The implanted oxygen ions cause oxidation to proceed quickly, finishing before a pronounced bird's beak is formed. The isolation regions themselves can therefore be narrow and finely patterned.